

# (12) United States Patent

Carter et al.

### (54) COMPOSITIONS OF AND METHODS FOR **CANCELLOUS BONE MATRIX**

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(58)Field of Classification Search

None

See application file for complete search history.

(56)References Cited

U.S. PATENT DOCUMENTS

5,298,254 A \* 3/1994 Prewett ...... A61B 17/686

424/422 5,439,951 A \* 8/1995 Glimcher ...... B01J 20/282

264/344

(Continued)

FOREIGN PATENT DOCUMENTS

WO WO 2014/110537 A1 7/2014

#### OTHER PUBLICATIONS

Australian Examination Report dated Apr. 14, 2016 issued in corresponding AU Application No. 2014235352, 6pp.

(Continued)

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(57)ABSTRACT

A bone repair composition including a cancellous bone matrix with cortical and/or cancellous bone particles loaded therein; and a kit comprising the cancellous bone matrix and the cortical and/or cancellous bone particles.

## 12 Claims, 2 Drawing Sheets

